* Levels 1-2: Do Math
* Solve the questions given, then make up a few more questions following the pattern and solve them as well.
* Level 3-4: General Rule

Describe in words what the pattern is. You should describe both the pattern in the questions and the pattern in the answers. It is even better if you can come up with a general rule using n – the number of the equation to be solved.

Level 5-6: Test It

Select one more example—say n=100—and predict what the answer will be using your general rule. Then set up a new equation using n=100 and solve it. Was the answer what your general rule predicted? If so, good work, go on to level 7-8. If not, check your general rule. Can you change it so it will work?

Level 7-8: Prove It

Write the equation with n in it. Don’t plug in any numbers for n. Solve it with the variables to prove your general rule. It may be helpful to use the two-column proof format. For instance:

x-n=7 my general rule

x=n+7 add n to both sides

Q.E.D. I got the general rule for my equation, so I’m done!

* X+1=2
* X+2=4
* X+3=6
* (x+1)/3=1
* (x+2)/3=2
* (x+3)/3=3
* (x+1)(x-1)=0
* (x+2)(x-2)=0
* (x+3)(x-3)=0
* (x+1)^2=(x-1)^2+2
* (x+2)^2=(x-2)^2+4
* (x+3)^2=(x-3)^2+6
* (x/1) + 2=1
* (x/2) + 4=2
* (x/3) + 6=3
* 1=x/1
* 2=x/4
* 3=x/9
* 4=x/16
* 1(x-2)=1
* 2(x-4)=2
* 3(x-6)=3
* (1x+2)/3=4
* (2x+3)/4=5
* (3x+4)/5=6